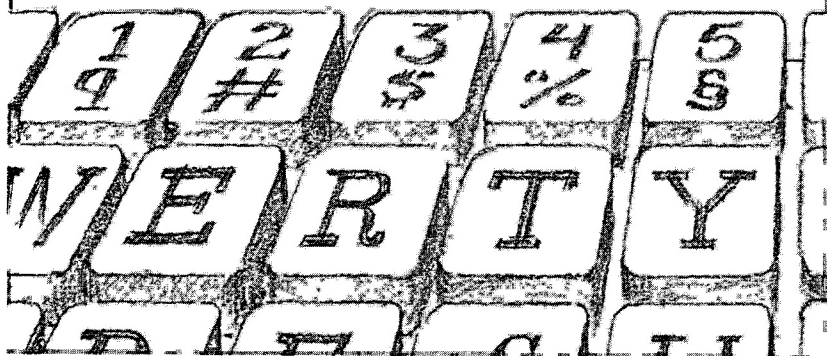# Choosing an Automatic Typewriter for the Law Office

By BERNARD STERNIN of the Brooklyn, New York Bar

To learn what automatic typing equipment is available and to select which is best suited for his office is no simple undertaking for a busy lawyer. The choice is not made easier by the continual introduction of new and improved machines and the resultant availability of excellent older models at very attractive prices—many of which are entirely suitable for certain applications.

The risk in the selection of an inappropriate machine lies not so much in its cost—you can recoup much of it—but rather in the possible failure of the entire project because of discouraged personnel,

and the abandonment of an approach which, with proper equipment, could have been an unparalleled success and saved vast amounts of time and money.

The author suggests you approach the question of the possible use of automatic typing equipment with the same thoroughness as you would approach a job for a client. If done successfully, it could be as important to you as any undertaking you are currently handling.

Assign responsibility for it to an attorney, or accept responsibility for it yourself. Allot time to it. Research the problem. Read all the material on the subject that has appeared in THE PRACTICAL LAWYER and send for anything anyone offers. Conclude with a written report.

THREE MAJOR CHOICES

In deciding which piece of equipment to select, you will have to make three major choices:

● *Recording media.* Should you install a machine that uses punched paper tape and cards or one that uses magnetic tape or magnetic cards? Paper is much cheaper than magnetics, but is not reusable.

● *Automatic Line Adjustment.* Should you obtain equipment capable of repositioning words to form new lines automatically? This feature facilitates making additions

and modifications to recorded material that change line length, but it adds to the cost of the machine.

● *Transfer Capacity.* Should you buy equipment with transfer capacity, that is, the ability to transcribe or re-record information from a recorded tape or card onto an unrecorded one, to form a new recording automatically. This feature may also increase cost.

The main differences among the various automatic typewriters involve the three factors mentioned above. For some applications, simpler equipment with less sophisticated features will get the job done every bit as well and for far less money. The more experienced user will employ the least expensive machine possible to do the required job, rather than use more costly equipment to do everything.

Therefore, it would be helpful to consider these differences as they affect each of the three most important applications of automatic typewriters.

HOW THE MACHINE WILL BE USED

Generally, automatic typewriters can be employed in three different ways in an office:

● Rough drafting;

● Revisionary work; and

• Repetitive or "programmed" typing.

When you have decided which of these prospective uses will probably be most important in your office, you will be able to select a machine whose features make it best adapted to your needs.

Rough Drafting

In rough drafting, the equipment is used to type onto scrap paper to produce a recording on which errors are immediately corrected by the typist as they are made. The recording is then used to produce an error-free typed product.

For rough drafting, a punched paper tape machine will do the job, but not as conveniently as magnetic tape or magnetic cards. On punched paper, errors are corrected by overpunching the wrong characters with a special delete code, and then repunching the correct character. With magnetics, retyping does both jobs.

Also, with the coding used with punched paper, certain special considerations must be kept in mind by the operator in connection with a shift in case (capitals to small letters or vice versa). Error correction on punched media therefore requires a somewhat more experienced operator than magnetics, and you will not be as free to shift untrained personnel to the machine.

Rough drafting can almost always proceed quite well on equipment that does not have the capacity to reposition words to form new lines, because almost all corrections are of approximately the same length as the error.

Similarly, transfer capacity, or the ability to transcribe material from a recorded card or tape to a blank one, has limited value for rough drafting—unless an error is not recognized until the operator has gone considerably passed it and is so extensive that she would like to redo the entire draft.

Revisionary Work

In revisionary work, the equipment is used to revise proposed typed material as it is developed into final form. Only new language needs to be typed manually. The prior recorded material is either untouched, rerecorded if changed, or skipped over if unwanted.

Recording Media

For revisionary work, punched paper tape can be used to do whatever can be done with magnetics, but in some respects not as conveniently or as fast. Magnetic tapes and cards will probably be easier to store than paper. The revisionary process is quicker with magnetics—not so much because magnetic machines type a bit faster, but primarily because bypassed materials are skipped much faster.

Magnetic recordings are re-

usable when the revision is completed. Punched paper, of course, is not. However, punched paper is so cheap that you might disregard its cost as a factor.

Also, punched paper has a few advantages over magnetic media:

- It can be written on;

- It can be cut apart and spliced together;

- It can be freely torn 'off at 'the end of each recorded unit and stored with the typed copy; and

- Its coding can be inspected—to verify a modification or to analyze what has been recorded.

Line Adjustment Important

The capacity to adjust line length to accommodate changes caused by additions and modifications is critical to revisionary work, since editing almost always affects the location of the right margin. Moreover, equipment designed with line-adjusting capacity will also be well provided with related controls to enable the operator to play out and skip word by word or line by line. If you plan to use the automatic typewriter for revisionary work, these features are important.

Transfer of Additional Revisions

The capacity to transfer material from a recorded tape or card to an unrecorded one is helpful in revisionary work—if the revision is carried forward through a *second recording*. Most revisionary work is finalized on the second run, and therefore need not be re-recorded.

Punched paper tape and card machines, by the nature of their design, have the capacity to punch a second tape or card coincidentally with the playout of a previously recorded one, because punching and playout take place at different parts of the machine.

With magnetics, it is possible to buy a single-station machine—one at which recording and playback are done by the same part of the machine, but, of course, not concurrently. Consequently, such a machine does not have transfer capacity. To obtain the ability to generate a new recording from a prior one, you must have a two-station machine, at a somewhat higher price.

Repetitive Typing

In repetitive or "programmed" typing, pre-recorded units, such as paragraphs of language, captions, or names and addresses, are fed into the equipment to produce a typed document. The final product is not necessarily identical with the recorded units used to compose it, because supplementary materials may be added from the machine's keyboard and pre-recorded words and lines may be bypassed.

In regard to' repetitive typing of pre-recorded materials, case data (names, addresses, captions) and paragraphs of language 'should be separately considered.

Cards for·Case Data

In some respects, paper tape and edge-punched cards can handle case data better than magnetic recording media. These items tend to be short, they are not always recorded in the same sequence, they are used in random order, and any one of them ·may have· to be singled out for revision at any time. Consequently, it is conveni: ent to have each item of recorded data as a separate unit.

You can easily do so with punched paper tape and edge-punched cards. You cannot with magnetic tape. However, magnetic cards are usable because the items of data can be recorded on particular track levels of the card and separately located for playout or change.

It is also necessary to make provision for the operator to see the recorded items of data, so not only can she find what she needs, but also know how it will lay out when typed.

The holder that stores punched paper tape can have a copy of the tape's content on it. Edge-punched cards can be labeled with the card's material.

Magnetic tape, being encased in a cassette, requires an independ-

ent logging system for this information, which is awkward. Magnetic cards, however, are good because their content may be shown on one or more three- by seven-inch index cards stored together with them.

Media for Language Components

Whether· language components —paragraphs or groups of paragraphs pre-recorded for repeated use—can better be stored on punched paper or on magnetics usually depends on how well developed your materials are.

Earlier stages of maturation are characterized by the use of many separate paragraphs, subjected to frequent revision to improve their content. Separate punched paper tapes, edge-punched cards, or magnetic cards are preferable to magnetic tape to facilitate the redrafting of each unit on an individual basis.

Later, when materials have become settled upon and stabilized to the point at which change is a rarity, magnetic tape is good, provided that the sequencing of the content of the tape does not require too much searching back and forth. Of course, some programs by their nature are best maintained on an individual paragraph basis permanently, no matter how well perfected.

Magnetic cards may turn out to be the best media for all purposes.

Automatic Line Adjustment

The capacity of the automatic typewriter to reposition recorded words onto new lines is of no value at all when the equipment is used to type case data. Names, addresses and captions lay out in a fixed way. A carrier-return code recorded at the end of each line will cause the machine to move to the next line on the page.

Consequently, if the use you intend is primarily the reproduction of data, or lists, or any materials that by their nature always lay out with a fixed line length, you can obtain equipment without line-adjusting capacity and save considerably in cost.

When the automatic typewriter is used to type pre-recorded language materials, the ability to readjust line length may become important. These materials are often stop-coded to permit the operator to add variable information from the machine's keyboard or to select one of several pre-recorded alternatives.

There will also be situations in which the language in a pre-recorded card or tape is not quite appropriate for the particular need of the moment, and the operator will make some modification in its use. Line length is usually affected by any of these operations, and the machine's ability to make the adjustment automatically is a great help.

However, you will find that a very large quantity of pre-recorded language materials can be typed automatically on equipment that does not readjust line length automatically. If variable entries are placed at the ends of paragraphs, no change in line length occurs. If the variables are all of approximately the same length, such as dates and even most names, the change of line length is within such predictable limits that the variation of the right margin will be of normal tolerance. Further, if the language that follows the addition or modification must be repositioned, it is entirely possible for the operator to do it in a slower, non-automatic way.

A review of your work and the state of your exchecquer may lead you to select equipment that does not have automatic line-adjusting capacity.

Transfer Capacity Is Helpful

Transfer capacity—the ability to copy the content of a recorded card or tape onto an unrecorded one—can be helpful in connection with case data. "Master" cards or tapes can be prepared, whose function it is to help in the creation of data cards or tapes, which in turn will be stored and used to do the actual typing.

The master cards contain the material common to the data cards that they help create. For example, a master card can be used to help

record captions. The master card transfers the name of the court, the, county, the dash lines, and the words "plaintiff," "defendant," and "versus" to the data card, stopping at appropriate points for the operator manually to type and thereby record the names of the parties.

By use of the machine's ability to transfer the content of one card to another, the master card has done about half of the typing needed to generate the data card, in this instance.

Transfer capacity also has value in connection with the use of cards and tapes for the production of pre-recorded language materials. As the individual pre-recorded paragraphs are being played out to type the required document, the machine can be, simultaneously, transferring the content, together with any material added manually from the machine's keyboard, to form a composit card or tape of the entire item.

Should further revision be required, the operator will find it easier to work with the composit unit, rather than having to reinsert the individual cards or tapes from which the item was generated.

CONCLUSION

There are many excellent automatic typewriters currently available. There is really no "best" machine in an absolute sense. Firms using more than one of these machines very frequently employ different makes and models, utilizing the less sophisticated ones to do the more routine work.

You should give some thought to reliability and repair. Generally speaking, automatic typing equipment is extremely hardy. It has to be, in order to stand up to the incessant use it will be subjected to. We are still using our original equipment, which is over 10 years old, and it has worked a 40-hour week from the time it arrived.

Automatic typewriters are manufactured by adding automatic capacity to a standard typewriter. The automation is in the associated controls and not in the typewriter itself. Almost all manufacturers of automatic typing equipment utilize some standard IBM machine as the typing unit, so no matter whose equipment you buy, you will probably be getting the same typewriter.

The automatic controls are electrical; there is almost never any trouble in that part of the equipment. If there is going to be trouble, it will almost surely be mechanical. Consequently, the risk of difficulty is probably identical no matter whose make you use.

Obtaining repairs in a major city is usually no problem. In outlying areas, you must make adequate inquiry about availability and cost. Shop and compare the cost of the comprehensive service contracts, including parts, that various manufacturers offer. It is an ex-

cellent indication of the reliability of the equipment. The manufacturer's experience as to the frequency of service calls and life expectancy of parts is very clearly reflected by it.

If you can use one of the older machines and can get a good bu on a rebuilt one, do not decline because of concern about reli bility. These older, less sophist cated machines are 'solid wor horses, and can give you years service.

APPENDIX

MANUFACTURERS AND SUPPLIERS

The following information was gathered from the manufacturers and suppliers of automatic typewriters and related accessories and materials. It is presented here simply to give the reader a general idea of what is on the market, and no endorsement by THE PRACTICAL LAWYER should be inferred.

This information was current as of February 1971 and is, of course, subject to change.

AUTOMATIC TYPEWRITERS

These descriptions of automatic typewriters are based on information supplied by their manufacturers and are not always directly comparable. For example, certain features may be standard on some machines and optional on others, and although certain machines might perform the same general function, some might do it more efficiently.

Therefore, it is important to see the machines in actual operation, before choosing one, to determine how well each will handle t automated approaches you co template for your office—and what cost.

A Note on Typing Speed

Although the various manufa turers claim automatic typi speeds ranging from 150 to 1 words per minute, the significan of this figure may depend on t average word length being us and whether it includes the ti lost during carriage return. comparing speeds in *characters p second* (that is, the number codes actually read by the m chine), the difference sometim vanishes.

For example, the IBM machin have a rated playback speed 15.5 c.p.s. (or 186 w.p.m.), but t averages out to 150 w.p.m. becau of the time lost when the carria returns at the end of each line. (this speed, a six-inch line will typed in about four seconds usi pica type, or in five seconds usi elite.)

The Edityper, ITEL, and Quin Data automatic typewriters (described below) each claim a maximum typing speed of 175 words per minute, while Redactron claims 180. However, since none of those machines have a rated playback speed exceeding 15.5 c.p.s., they probably also type at an average of about 150 words per minute.

Therefore, the following listings will refer each machine's rated playback speed in characters per second (c.p.s.) as the most uniform means of comparison.

Auto-typist

American Automatic Typewriter Co.
2323 North Pulaski Road
Chicago, Ill. 60639

Description

The "Auto-typist Push-button Selector Automatic Typewriter" is not itself a typewriter, but rather a specially designed memory unit that can be connected to any make or model of electric typewriter to produce automatic typing. The typewriter is placed on a console unit, which also serves as a table for the operator's use.

Material is recorded on perforated paper rolls with a capacity of 20,000 characters. During playback, the characters are sensed by a pneumatic actuating device. The desired paragraphs or clauses are selected, either singly or in groups, by pushing numbered buttons, without the handling of tapes or cards.

The Auto-typist offers "margin control," including automatic hyphenation. Its typing speed depends on the electric typewriter being used, averaging about 150 words per minute for most models.

Model 65100, which has 100 pushbutton selections, holds two memory rolls at a time, with a total capacity of 40,000 characters. Additional rolls can be inserted in a few minutes' time, as required. The Model 75, which has 50 pushbuttons, holds only one roll at a time.

The Model 67 Perforator is used to hand-punch program rolls for use on any Auto-typist model. The Model 97 Perforator automatically regenerates program rolls and includes a manual keyboard for the insertion of revised data to upgrade the copy on the program. Auto-typist agents also offer a perforating service for customers, whereby they will manually punch any copy at a usual charge of 30 cents per line.

Prices

The following list prices are F.O.B. Chicago and do not include the cost of the automatic typewriter, which the customer must supply separately.

Model 65100 . . . . . $2,750.

Model 75 . . . .   1,685.
Model 67 . . . .   495.
Model 97. . . . .   1,450.

Edityper

The Edityper Corporation
1335 Rockville Pike
Rockville, Md. 20852

Description

The Edityper combines an IBM "Selectric" typewriter with the Edityper 200 Reader-Punch, which records on paper tape and is compact enough to be placed beside the typewriter on a standard secretarial desk. Its rated playback speed is 15.4 c.p.s.

An optional feature is the Editron Edit unit, which provides revisionary capabilities. Somewhat smaller than the reader-punch, it has pushbutton controls to allow the operator to play back recorded material in units of words, lines, sentences, or paragraphs. There is automatic adjustment of line lengths during revisions, and indentations are handled by a "Tab Memory" feature.

The Edityper is able to transfer and upgrade material from one tape to another. The addition of an auxiliary reader will permit the merging of two tapes, revising from either or both, with an updated hard copy and tape. The manufacturer is now in the process of developing the machine's capacity to handle edge-punched cards as well.

Prices

The basic cost of an Edityp€ including the revision capabilitie is $6,050, and the machine can I rented for $216 per month. Tl auxiliary reader costs $1,35 Prices include a one-year full wa tranty, including service and par

Friden

The Singer Company
Friden Division
San Leandro, Cal. 94577

Description

The Friden "Flexowritei which records on edge-punch cards and paper tape, has alrea been described in detail in t author's articles in THE PRAC CAL LAWYER on *How To Autome Law-Office Typing—A Step-b Step Approach* [May 1968, p. 6ʃ *Edge-Punched Cards* [Apr. 19€ p. 48], and *Punched Paper Ta* [Nov. 1969, p. 54].

The punch and the reader, co sisting of two units attached to tl side of the typewriter, allow t transfer of recorded material frc one card or tape to another. T Model 2340 "Flexowriter" h special revisionary capabilitie including automatic line adju: ment and hyphenation. Moc 2304 provides proportional spa ing for "executive" letterwritin Carbon ribbons are standard (some models.

"Flexowriters" of the 23(

ieries operate at playback speed of 12.2 c.p.s.

Prices

Model 2340 is priced at $3,950 and leases for $139 per month. Model 2304 sells for $3,600, with leasing at $131 per month. Depending on the model and features, other "Flexowriters" range from about $3,300 to $5,500.

IBM

International Business Machines Corporation
Office Products Division
590 Madison Avenue
New York, N.Y. 10022

Mag Card "Selectric"

The IBM Magnetic Card "Selectric" Typewriter records on 3¼ by 7⅜-inch magnetic cards, which have a capacity of 50 lines or 5,000 typed characters—equivalent to somewhat more than a full page of copy. This machine is described in detail in Sternin, *Magnetic Cards—A New Medium for Automatic Typing,* THE PRACTICAL LAWYER, Oct. 1970, p. 49.

The typing unit is similar to the regular IBM "Selectric" typewriter and uses an interchangeable type-ball. Models come with a choice of carbon or fabric ribbons. The Read/Record Console, into which the mag cards are inserted, stands on the floor next to the operator's desk.

The machine provides automatic line adjustment and hyphenation for revisionary work, but it cannot transfer material from card to card. Its rated playback speed is 15.5 c.p.s.

MT/ST

The IBM Magnetic Tape "Selectric" Typewriter records on magnetic tape—one-half inch wide and up to 120 feet long, contained in plastic cartridges—which hold up to 28,800 characters, or about 16 letter-sized pages of typing. This machine is described in detail in Allen, *Law-Office Typing with the IBM, MT/ST,* THE PRACTICAL LAWYER, Apr. 1970, p. 13.

The typing unit, similar to the IBM "Selectric" typewriter, comes with its own special desk. The Tape Console, which stands beside it, has a control panel and holds either one tape (Model II) or two tapes (Model IV) at a time.

Recorded material is located on the tape by means of a "search code." The basic model searches only in one direction, but an optional feature allows reverse searches as well. There is automatic line adjustment and hyphenation for revisionary work. The two-tape model can transfer material from one tape to another, as well as switch automatically from one tape to another to merge their contents in a single typewritten document.

The typewriter has a rated playback speed of 15.5 c.p.s. Models

come with a choice of fabric or carbon ribbons.

Prices

For the Mag Card Selectric, purchase prices start at $7,875, and monthly rental charges start at $175.

For the MT/ST, prices vary depending on the model and optional features. Purchase prices begin at $7,150, and monthly rental charges at $185.

ITEL

ITEL Corporation
Information Products Division
2585 East Bayshore
Palo Alto, Cal. 94303

Description

The ITEL Word Processor uses paper tape contained in tape cartridges and also edge-punched cards. It comes as a single, desk-top unit, with the typewriter portion in the center and the reader and punch at either side. The typing unit utilizes the IBM "Selectric" and has an interchangeable typing element and a drop-in cartridge ribbon.

Model 852 has automatic line adjustment and hyphenation, has a transfer capacity, and operates at a rated playback speed of 14.7 c.p.s.

Price

The purchase price of the ITEL Word Processor, Model 852, is $4,940.

Metro Tel

Metro Tel Corp.
409 Railroad Ave.
Westbury, N.Y. 11590

Description

Metro Tel manufactures a li of equipment, called "MAT that employs ordinary elect typewriters to produce autom typing. The typewriter is pla on top of a MATE Converter 2 which then plugs into one of s eral models of readers.

Recording must be done o special machine, the MATE Perforator, which punches roll paper tape. Each roll stores u 800 lines of typewritten cop

The basic reader unit is MATE 602. However, the M 103 provides for the auto selection of programmed graphs, by means of 30 p buttons. It types at the maxi rated speed of the customer's tric typewriter, which is about words per minute for most m

Special Units

By means of a plug-in called the Duomate 501, readers can be connected single typewriter, allowing erator to select material fro different tapes. The MAT Type 621, on the other allows a single reader to two typewriters simultaneou

Prices

The following retail prices are for complete MATE systems. Typewriters are not included.

602 System	$1,803.
103 System	2,550.
Duomate System ..	3,380.
Bi-Type System ...	2,370.

The following retail prices are for individual pieces of MATE equipment.

602 Reader	$1,380,
103 Reader	2,127.
851 Perforator	825,
201 Converter	423.
501 Duomate	195,
621 Bi-Type	143.

QuinData

QuinData, Inc.
Division of Quindar Electronics, Inc.
60 Fadem Road
Springfield, N.J. 07081

Description

The QuinType-70 records typed material on punched paper tape. It does not handle edge-punched cards. It consists of an IBM heavy-duty "Selectric" typewriter (of the kind used as input and output to computers) and a reader-punch module that fits on the operator's desk.

The operator can add or delete paragraphs, sentences, lines, words, or characters. The machine has transfer capacity for "upgrading" tapes and automatic adjustment of lines and hyphenation for revisionary work. Carbon ribbons are optional. The machine's rated playback speed is 15.4 c.p.s.

Price

The QuinType-70 is priced at $6,800. Leasing or rental plans are available.

Redactron

Redactron Corporation
100 Parkway Drive South
Hauppauge, N.Y. 11787

Description

The "Data Secretary" Editing Typewriter records on magnetic tape (using the computer version of the Norelco tape cassette) or on magnetic cards, which hold 64 lines of type or about 10,000 characters. The cards are identical in size to those used by the IBM Mag Card "Selectric"; the additional capacity is attained by a closer recording density, not by a larger card. Therefore, the standard mag card of any supplier can be used in the Redactron machine.

The typing unit is a Redactron-modified IBM heavy-duty ball typewriter to which a number of extra keys have been added. The storage unit is in an auxiliary console that stands next to the operator's desk. All controls are on the typewriter keyboard.

The machine is able to adjust automatically both left and right margins, to underscore automatically by word or by line; to maintain an indented format when corrections have been made in the copy, and to search automatically and play back prestored material. It automatically sets tabs and can switch from single- to double-spacing.

On Model R-5, which holds two tapes or cards at a time, material can be transferred from one tape or card to another at a maximum speed of 1,000 characters per second, or the recorded material can be merged into a single document. Model R-4, which can hold only one cassette or card, lacks these capabilities.

The machine's rated playback speed is 15 c.p.s. Carbon ribbons are optional.

Prices

The "Data Secretary" will be released for sale during the summer of 1971 and will sell for $6,000 to $8,000, depending on the optional equipment installed.

USED OR REBUILT AUTOMATIC TYPEWRITERS

IOA Data Corp.

IOA Data Corp.
383 Lafayette St.
New York, N.Y. 10003

This company states: "We sell the full line of Friden, Dura, and IBM automatic typewriters. The machines are all fully overhauled and guaranteed to be suitable for the original manufacturers' maintenance agreements. Savings are 40 to 60 per cent of the new equipment cost."

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